What is claimed is:

1. An optical system for an optical disc drive, comprising:

a light source that emits first and second light beams, said first and second light beams utilized for recording and/or reproducing data to/from first and second optical discs, respectively, the second optical disc having a thicker protective layer and lower recording density than the first optical disc;

an objective lens provided with a diffraction structure, said diffraction structure being designed to focus said first light beam on a recording layer of the second optical disc and said second light beam on a recording layer of the first optical disc; and

a collimator lens disposed between said light source and said objective lens to adjust diverging/converging angle of said first and second light beams entering said objective lens,

wherein change in spherical aberration of said first light beam caused by wavelength deviation from a design wavelength due to individual specificity of said light source is corrected by adjusting the diverging/converging angle of said first light beam emerging from said collimator lens.

2. The optical system according to claim 1, wherein said diffraction structure is designed so that change in spherical aberration caused by wavelength variations of said first and second light beams due to temperature variation of said light source compensate for change in spherical aberration caused by temperature variation of said objective lens.

3. The optical system according to claim 1, wherein said diffraction structure is designed so that change in spherical aberration caused by said objective lens in accordance with wavelength variation of said first light beam is generated substantially only by third-order spherical aberration.

4. The optical system according to claim 3, wherein said diffraction structure is designed so that change in fifth or higher order component of the spherical aberration caused by said objective lens in accordance with wavelength variation of said first light beam is less than one fifth of the third-order component thereof.

5. The optical system according to claim 3, wherein said diffraction structure is designed so that change in fifth

or higher order component of the spherical aberration caused by said objective lens in accordance with wavelength variation of said first light beam is less than 0.0005 λrms/nm.

6. The optical system according to claim 1, wherein said light source includes first and second light emitting elements for generating said first and second light beams, respectively, said first and second light emitting elements being integrally formed.

7. The optical system according to claim 1, wherein the diverging/converging angle of said first light beam is adjusted so as to minimize spherical aberration of said first light converged onto the recording layer of the first optical disc.

8. The optical system according to claim 1, wherein said collimator lens is located between first and second optimum positions, the spherical aberration of said first light beam converged onto the recording layer of the first optical disc being minimized when said collimator lens is located at said first optimum position, the spherical aberration of said second light beam converged onto the recording layer of the second optical disc being minimized

when said collimator lens is located at said second optimum position.

9. The optical system according to claim 1, wherein said objective lens has a numerical aperture for said first light beam not less than 0.63.

10. An optical system for an optical disc drive, comprising:

first and second light sources emitting first and second light beams, respectively, said first and second light beams utilized for recording and/or reproducing data to to/from first and second optical discs, respectively, the second optical disc having a thicker protective layer and lower recording density than the first optical disc;

an objective lens provided with a diffraction structure, said diffraction structure being designed to focus said first laser beam on a recording layer of the first optical disc and said second laser beam on a recording layer of the second optical disc; and

first and second collimator lenses disposed between said objective lens and said first and second light sources, respectively, so as to adjust diverging/converging angles of said first and second light beams entering said objective lens;

wherein said first and second collimator lenses are located so as to respectively correct change in spherical aberration of said first and second light beams caused by wavelength deviations from design wavelengths of said first and second light beams due to individual specificity of said first and second light sources.

11. The optical system according to claim 10, further comprising an optical element disposed between said objective lens and said first and second collimator lenses, said optical element combining optical paths of said first and second light beams passed through said first and second collimator lenses.

12. The optical system according to claim 10, wherein said diffraction structure is designed so that change in spherical aberration caused by wavelength variations of said first and second light beams due to temperature variations of said first and second light sources compensate for change in spherical aberration caused by temperature variation of said objective lens.

13. The optical system according to claim 10, wherein said objective lens has a numerical aperture not less than 0.63 for said first light beam.

14. An optical system for an optical disc drive arranged to handle a first optical disc and a second optical disc by first and second light beams having different wavelengths to each other, the second optical disc having a thicker protective layer and lower recording density than the first optical disc, comprising:

an objective lens provided with a diffraction structure, said diffraction structure being designed so that said first and second light beams respectively handle the first optical disc and the second optical disc and so that change in spherical aberration caused by said objective lens in accordance with wavelength variation of said first light beam is generated substantially by third-order spherical aberration only.

15. The optical system according to claim 14, wherein said diffraction structure is designed so that change in fifth or higher order component of the spherical aberration caused by said objective lens in accordance with wavelength variation of said first light beam is less than one fifth of the third-order component thereof.

16. The optical system according to claim 14, wherein said diffraction structure is designed so that change in fifth

or higher order component of the spherical aberration caused by said objective lens in accordance with wavelength variation of said first light beam is less than 0.0005 λrms/nm.

17. The optical system according to claim 14, wherein said objective lens has a numerical aperture for said first light beam not less than 0.63.

18. An objective lens for an optical system of an optical disc drive, said optical disc drive being arranged to handle a first optical disc and a second optical disc by first and second light beams having different wavelengths to each other, the second optical disc having a thicker protective layer and lower recording density than the first optical disc, comprising:

a diffraction structure designed so that said first and second light beams respectively handle the first optical disc and the second optical disc and so that change in spherical aberration caused by said objective lens in accordance with wavelength variation of said first light beam is generated substantially by third-order spherical aberration only.

19. The objective lens according to claim 18, wherein said

diffraction structure is designed so that change in fifth or higher order component of the spherical aberration caused by said objective lens in accordance with wavelength variation of said first light beam is less than one fifth of the third-order component thereof.

20. The objective lens according to claim 18, wherein said diffraction structure is designed so that change in fifth or higher order component of the spherical aberration caused by said objective lens in accordance with wavelength variation of said first light beam is less than 0.0005 λrms/nm.